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REMARKS/ARGUMENTS

The Office Action mailed November 12, 2003, has been received and reviewed. Claims 1 through 5 and 7 through 13 are currently pending in the application. Claims 1 through 5 and 7 through 13 stand rejected. Applicants have amended claim 1 and respectfully request reconsideration of the application as amended herein.

Objection to Oath/Declaration

The Examiner states that the previously filed 3.73(b) statement indicates that a true copy of the assignment is attached but, that the Assignment cannot be found in the image file wrapper documentation.

Submitted herewith, as Appendix A, please find a copy of the Power of Attorney by Assignee and Certificate Under 37 CFR §3.73(b) with the attached copy of the Assignment as originally submitted on August 17, 2001. Also included in Appendix A is a copy of the date-stamped postcard indicating receipt of such documents (i.e., "Power of Attorney by Assignee and Certificate Under 37 CFR § 3.73(b) (4 pages)") by the United States Patent and Trademark Office on August 17, 2001.

Applicants further submit that the Assignment included herewith in Appendix A was recorded by the United States Patent and Trademark Office on August 17, 2001 at reel 012105, frame 0949.

Applicants respectfully request that the documents included in Appendix A be made of record herein and that the Examiner acknowledge that the Assignee's right to take action in the present case has been established the satisfaction of the Patent Office in accordance with 37 CFR §3.73.

35 U.S.C. § 103(a) Obviousness Rejections

Obviousness Rejection Based on U.S. Patent No. 6,056,823 to Sajoto et al., in View of U.S. Patent No. 4,638,150 to Whitney, as Demonstrated by U.S. Patent No. 4,480,930 to DeZubay et al.

Claims 1 through 5 and 7 through 13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Sajoto et al. (U.S. Patent No. 6,056,823) in view of Whitney (U.S. Patent No. 4,638,150), as demonstrated by DeZubay et al. (U.S. Patent No. 4,480,930). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

The 35 U.S.C. § 103(a) obviousness rejections of claims 1 through 5, and 7 through 13 are improper because the references relied upon by the Examiner fail to teach or suggest all of the limitations of the presently claimed invention and, furthermore, because there is a lack of motivation to combine the references in the manner suggested by the Examiner.

Independent claim 1, as amended herein, is directed to a deposition chamber. The deposition chamber comprises: a chamber body having a cavity formed therein; a chamber lid configured to enclose the cavity; a vapor delivery head positioned within the cavity; a feedthrough device positioned in the chamber body, the feedthrough device having a longitudinal body portion and being configured to receive vapor from a vapor source and transfer the vapor therethrough along a pathway toward the vapor delivery head; a heating device including at least one resistor element having at least a portion thereof disposed within a thermally conductive sheathing, the heating device including a nonheated section and a heated section, wherein at least a portion of the heated section is configured to conduct heat to the longitudinal body portion of

the feedthrough device; a layer of thermal insulation disposed between at least a portion of the thermally conductive sheathing of the heating device and the chamber body and substantially circumscribing the longitudinal body portion and the at least a portion of the thermally conductive sheathing, *the layer of thermal insulation including at least a portion which is contiguous with at least one of a surface of the chamber body and a surface of the longitudinal body portion*; and *a temperature sensing device disposed between the layer of insulation and the longitudinal body portion of the feedthrough device and configured to generate a signal representative of a temperature sensed thereby*. Applicants respectfully submit that the references relied upon by the Examiner fail to teach or suggest all of the limitations as set forth in claim 1 of the presently claimed invention.

The Examiner cites Sajoto as teaching a chamber body having a cavity formed therein; a chamber lid configured to enclose the cavity; a vapor head positioned within the cavity; a feedthrough device having a longitudinal body portion positioned in the chamber body having a lumen defined therein and configured to receive vapor from a vapor source and transfer the vapor therethrough along a pathway toward the vapor delivery head; a resistance heating device associated with the feedthrough device wherein at least a portion of the resistance heater is positioned within a continual helical groove of the feedthrough device. The Examiner then cites Whitney as teaching a flexible wire heater device including: electrical resistance leads having at least a portion thereof disposed within a stainless steel conductive sheathing; and “a thermocouple (‘PTC component 14’, ‘temperature-responsive component 14’; column 4, lines 54-68) positioned within the conductive sheathing to form a ‘self-limiting’ heater.” (Office Action, page 7; the Examiner cites, in a footnote, U.S. Patent 4,480,930 to DeZubay et al. as demonstrating that PTCs are thermocouples). The Examiner further cites Whitney as teaching a layer of thermal insulation (42, 44) disposed between at least a portion of the heated section (40) of the heating device; and “a temperature sensing device (‘PTC component 14’. ‘temperature-responsive component 14’; column 4, lines 54-68) positioned inside the layer of insulation. (Office Action, page 5).

The Examiner then states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace Sajoto’s heater with Whitney’s heater by either

adhering or welding Whitney's heater to Sajoto's feedthrough device to provide a heater with a temperature responsive component to limit elevated temperatures as taught by Whitney. (See, e.g., Office Action, page 7). Applicants respectfully disagree.

Applicants submit that Sajoto and Whitney fail to teach or suggest all of the limitations of the presently claimed invention as set forth in claim 1. More specifically, claim 1, includes a layer of thermal insulation disposed between at least a portion of the thermally conductive sheathing of the heating device and the chamber body and substantially circumscribing the longitudinal body portion and the at least a portion of the thermally conductive sheathing, *the layer of thermal insulation including at least a portion which is contiguous with at least one of a surface of the chamber body and a surface of the longitudinal body portion*. Furthermore, claim 1 includes a temperature sensing device *disposed between the layer of thermal insulation and the longitudinal body portion of the feedthrough device*. Moreover, the temperature sensing device is *configured to generate a signal representative of a temperature sensed thereby*.

Applicants note that, while the Examiner cites Whitney as teaching a layer of thermal insulation, such insulation (42, 44) is disposed internally of the sheathing and, thus, if combined with Sajoto, *would not be contiguous with at least one of a surface of the chamber body and a surface of the longitudinal body portion of the feedthrough device*.

Furthermore, Applicants submit that the combination of Whitney and Sajoto does not result in a temperature sensing device being disposed between the recited layer of thermal insulation and longitudinal body portion of the feedthrough device. Rather, as set forth in previous correspondence, Sajoto teaches that a "radiation shield 65 is disposed over the heater to prevent thermal radiation for heating the outer shell 41" (col. 6, lines 34-36), while, as shown in FIGS. 2 and 3A, a thermocouple (66) is disposed *external* to the radiation shield 65. In other words, Sajoto's thermal radiation shield is disposed between the thermocouple and the heating device.

Additionally, Sajoto and Whitney fail to teach a temperature sensing device configured and located as set forth in claim 1 of the presently claimed invention wherein the temperature sensing device is *configured to generate a signal upon sensing a temperature*. Nor does the

Examiner point to any teaching or suggestion of such subject matter in either Sajoto or Whitney. Rather, as pointed out by the Examiner, Whitney teaches a “self limiting heater” which utilizes a positive temperature coefficient (PTC) or “temperature responsive component which is thermally coupled to the heating component and which has an electrical property [(i.e., resistance),] which varies so that, when the heater is connected to the power supply, the heat generated by the module decreases substantially as the temperature of the module approaches an elevated temperature.” (Whitney, col. 2, lines 11-17). Thus, an electrical characteristic (i.e., resistance) of the PTC component changes with temperature, but an electrical signal representative of the temperature is not generated thereby upon sensing a temperature.

Moreover, Applicants maintain their position that the “PTC component 14” (also styled as “temperature-responsive component 14”) described by Whitney is not to be characterized as a temperature sensing device (or thermocouple) as set forth in the presently considered Office Action.

Rather, Whitney discloses a modular heater including a pair of elongate conductors and a plurality of rigid heating modules connected in parallel with each other between the conductors. The heating modules include “a temperature-responsive component 14 that has a positive temperature coefficient of resistance.” (Col. 4, lines 54-56). As set forth above, the temperature-responsive component “is thermally coupled to the heating component and ... has an electrical property which varies so that, when the heater is connected to the power supply, the heat generated by the module decreases substantially as the temperature of the module approaches an elevated temperature.” (Col. 2, lines 10-18). Furthermore, Whitney states that, for purposes of the Whitney disclosure, “a material is defined as having a ‘positive temperature coefficient of resistance’ if it increases in resistivity, in the temperature range of operation, sufficiently to render the heater self regulating.” (Col. 2, lines 25-29).

In other words, the heater taught by Whitney is self regulating because it incorporates, as part of its heating module, a material which exhibits a substantial change in resistance over a selected operating temperature range. Thus, as the resistance of the material changes, the heat produced by the heating module correspondingly changes. Such a device is markedly different from a temperature sensing device as set forth in claim 1 of the presently claimed invention

which is configured to generate a signal upon sensing a temperature.

Applicants note that the Examiner cites DeZubay as demonstrating “that PTCs are thermocouples (column 3, line 63).” (Office Action, fn 1; page 7). Applicants respectfully submit that DeZubay fails to make any connection between the PTC (positive thermal coefficient) components taught by Whitney and any type of thermocouple. Rather, the Examiner has simply found two references which happen to both utilize the same acronym (PTC) but which each utilize the acronym to represent different components. More specifically, Whitney uses the acronym to represent a “positive temperature coefficient” while DeZubay simply the same acronym, “PTC,” to represent a “pulsed thermocouple concept.” (Col. 3, lines 63-64).

According to DeZubay, the pulsed thermocouple (PTC) concept is used to analyze the transient behavior of an alternately heated and cooled body – in this case the thermocouple junction – to provide data which can be extrapolated to steady state conditions which would exist after indefinite thermocouple exposure.” (Col. 3, lines 64-68). The concept taught by DeZubay has essentially no relationship to the concept of a “positive thermal coefficient” material as taught by Whitney. Applicants, therefore, submit that the acronym “PTC” is clearly used by DeZubay in a different and unrelated context as compared to the use of the same acronym by Whitney.

Applicants further submit that there is a lack of motivation to combine Sajoto with Whitney in the manner suggested by the Examiner. Indeed, Applicants submit that Sajoto expressly teaches away from the presently claimed invention as set forth in claim 1. As noted above, Sajoto teaches that a thermal radiation shield is disposed over the heater to prevent thermal radiation from heating an associated outer shell while the thermocouple is disposed *external* to the thermal radiation shield relative to the heating device. (See, e.g., col. 6, lines 34-36; FIGS. 2 and 3A).

Applicants, therefore, respectfully submit that claim1 is allowable over Sajoto and Whitney, either considered separately or in combination, and respectfully requests reconsideration thereof.

Applicant further submits that claims 2 through 5 and 7 through 13 are allowable as being dependent from an allowable base claim as well as for the additional patentable subject matter introduced thereby.

With respect to claim 8, Applicants submit that, contrary to the Examiner's assertion, Sajoto and Whitney fail to teach or suggest a heater device having a temperature sensing device disposed within the thermally conductive sheath of the heating device. As noted above, the PTC component 14 of Whitney is a self-limiting heater rather than a temperature sensing device as defined by the presently claimed invention.

With respect to claims 9 and 10, Applicants submit that Sajoto and Whitney fail to teach or suggest a thermocouple configured and located as set forth by the presently claimed invention. While the Examiner has cited DeZubay as demonstrating that PTCs are thermocouples, as set forth above, the reference to a "PTC" by DeZubay is clearly inconsistent with the use of the same acronym by Whitney. As previously submitted, Applicants note that a basic thermocouple conventionally includes a pair of dissimilar metal components forming a junction therebetween to produce a temperature induced voltage. Applicants find no teaching or suggestion in Whitney regarding such a structure.

With respect to claim 10, Applicants further submit that Sajoto and Whitney fail to teach or suggest a thermocouple disposed within the thermally conductive sheathing.

With respect to claim 11, Applicants submit that Sajoto and Whitney fail to teach or suggest that at least a portion of the thermally conductive sheathing is configured to maintain the heating device in a substantially helical pattern complementary with the continual helical groove.

With respect to claim 13, the Examiner states that it would have been obvious to one of ordinary skill in the art at the time the invention was made to replace Sajoto's heater with Whitney's heater by welding Whitney's heater to Sajoto's feedthrough device. However, Applicants submit that welding of Whitney's device, with the associated localized application of intense heat, would pose a substantial risk of damaging the electrical circuits formed on the heaters (8) and thereby render the device of Whitney ineffective. Thus, one of ordinary skill in the art would not be motivated to weld the device of Whitney to the feedthrough device of Sajoto.

Applicants, therefore, respectfully request reconsideration and allowance of claims 1 through 5 and 7 through 13.

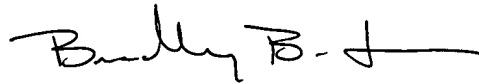
ENTRY OF AMENDMENTS

The amendments to claim 1 above should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application.

CONCLUSION

Claims 1 through 5 and 7 through 13 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



Bradley B. Jensen
Registration No. 46,801
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Telephone: 801-532-1922

Date: February 11, 2004

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Document in ProLaw



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Craig M. Carpenter
Serial No.: Not yet assigned
Filed:
Title: HEATED GAS LINE BODY FEEDTHROUGH FOR VAPOR AND GAS DELIVERY SYSTEMS AND METHODS OF EMPLOYING SAME

Examiner: Unknown
Group Art Unit: Unknown
Attorney Docket No.: 4880US (01-0170)

**POWER OF ATTORNEY BY ASSIGNEE
AND CERTIFICATE UNDER 37 CFR § 3.73(b)**

Commissioner for Patents
Washington, D.C. 20231

Sir:

MICRON TECHNOLOGY, INC., assignee of the entire right, title and interest by assignment from the inventor(s) in the above-identified application, hereby appoints the following attorneys and agents:

David V. Trask, Reg. No. 22,012	William S. Britt, Reg. No. 20,969	Laurence B. Bond, Reg. No. 30,549
Joseph A. Walkowski, Reg. No. 28,765	James R. Duzan, Reg. No. 28,393	H. Dickson Burton, Reg. No. P-48,396
Allen C. Turner, Reg. No. 33,041	Edgar R. Cataxinos, Reg. No. 39,931	Kent S. Burningham, Reg. No. 30,453
Brick G. Power, Reg. No. 38,581	Paul C. Oestreich, Reg. No. 44,983	Devin R. Jensen, Reg. No. 44,805
Krista Weber Powell, Reg. No. 47,867	Jarett K. Abramson, Reg. No. 47,376	David L. Stott, Reg. No. 43,937
Shawn G. Hansen, Reg. No. 42,627	Bretton L. Crockett, Reg. No. 44,632	Bradley B. Jensen, Reg. No. 46,801
Katherine A. Hamer, Reg. No. 47,628	Michael L. Lynch, Reg. No. 30,871	Charles B. Brantley II, Reg. No. 38,086

as its attorneys with full power of substitution to prosecute this application and all applications claiming filing date priority therefrom and to transact all business in the U.S. Patent and Trademark Office in connection therewith.

The above-identified assignee hereby elects, pursuant to 37 C.F.R. § 3.71, to conduct the prosecution of the above-identified patent application to the exclusion of the inventor(s).

A chain of title from the inventor(s) of the above-identified patent application to the above-identified assignee is shown:

☐ In an assignment recorded in the U.S. Patent and Trademark Office at Reel , Frame .

☒ In an assignment filed herewith for recordation, a true copy of which is attached hereto.

The undersigned has reviewed the above-identified assignment and, to the best of his knowledge and belief, title is in the above-identified assignee.

The undersigned further avers that he is empowered to make and sign the foregoing certification on behalf of the above-identified assignee, and to take the action set forth herein on its behalf.


Please direct all communications regarding the above-identified application to:

Bradley B. Jensen,
TRASKBRITT, PC
P.O. Box 2550
Salt Lake City, UT 84110
Tele: (801) 532-1922
Fax: (801) 531-9168

Respectfully Submitted,

MICRON TECHNOLOGY, INC.

Date: 8-14-01

By: 
Michael L. Lynch, Esq.
Reg. No. 30,871
Chief Patent Counsel,
MICRON TECHNOLOGY, INC.

ASSIGNMENT

FOR GOOD AND VALUABLE CONSIDERATION, the receipt, sufficiency and adequacy of which are hereby acknowledged, each undersigned ASSIGNOR does hereby:

SELL, ASSIGN AND TRANSFER to MICRON TECHNOLOGY, INC.
("ASSIGNEE"), a corporation of the State of Delaware having a place of business at 8000 South Federal Way, Boise, Idaho 83706-9632, the entire right, title and interest for the United States and all foreign countries in and to any and all improvements which are disclosed in the Application for United States Letters Patent which has been executed by each undersigned ASSIGNOR concurrently herewith and is entitled **HEATED GAS LINE BODY FEEDTHROUGH FOR VAPOR AND GAS DELIVERY SYSTEMS**, such application and all divisional, continuing, substitute, renewal, reissue and all other applications for patent which have been or shall be filed in the United States and all foreign countries on any of such improvements; all original, reissued and reexamined patents which have been or shall be issued in the United States and all foreign countries on such improvements; and specifically including the right to file foreign applications under the provisions of any convention or treaty and claim priority based on such application in the United States;

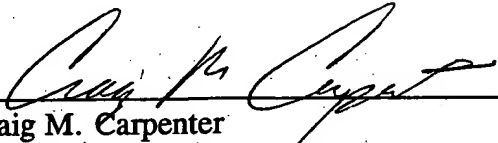
AUTHORIZE AND REQUEST the issuing authority to issue any and all United States and foreign patents granted on such improvements to the ASSIGNEE;

WARRANT AND COVENANT that no assignment, grant, mortgage, license or other agreement affecting the rights and property herein conveyed has been or will be made to others by the undersigned, and that the full right to convey the same as herein expressed is possessed by the undersigned;

COVENANT, when requested and at the expense of the ASSIGNEE, to carry out in good faith the intent and purpose of this assignment, the undersigned will execute all divisional, continuing, substitute, renewal, reissue, and all other patent applications on any and all such improvements; execute all rightful oaths, declarations, assignments, powers of attorney and other papers; communicate to the ASSIGNEE all facts known to the undersigned relating to such improvements and the history thereof; and generally do everything possible which the ASSIGNEE shall consider desirable for vesting title to such improvements in the ASSIGNEE, and for securing, maintaining and enforcing proper patent protection for such improvements;

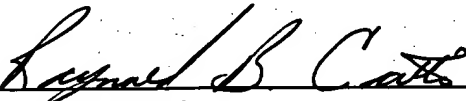
TO BE BINDING on the heirs, assigns, representatives and successors of each undersigned ASSIGNOR and extend to the successors, assigns and nominees of the ASSIGNEE.

ASSIGNORS:



Craig M. Carpenter
Residing at: 4186 E. Carnation Ct., Boise, ID 83716

Date 13 August 2001

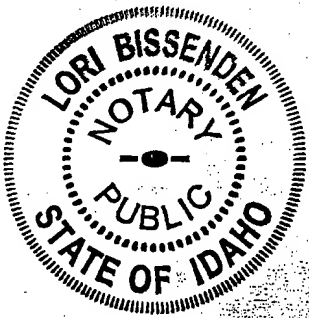


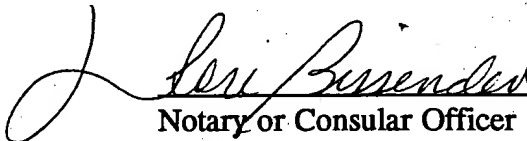
Raynald B. Cantin
Residing at: 1165 S. Dale St., #303, Boise, ID 83706

Date 13 Aug 2001

STATE OF IDAHO)
 : ss.
County of Ada)

BEFORE ME, the undersigned authority, on this 13th day of August, 2001, personally appeared Craig M. Carpenter, known to me to be the person whose name is subscribed to the foregoing instrument and acknowledged to me that he executed the same of his of own free will for the purposes and consideration therein expressed.

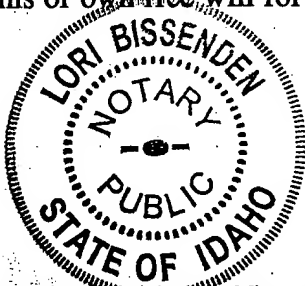


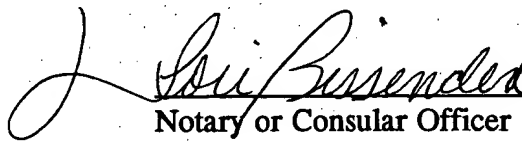


Notary or Consular Officer

STATE OF IDAHO)
 : ss.
County of Ada)

BEFORE ME, the undersigned authority, on this 13th day of August, 2001,
personally appeared Raynald B. Cantin, known to me to be the person whose name is
subscribed to the foregoing instrument and acknowledged to me that he executed the same of
his own free will for the purposes and consideration therein expressed.




Notary or Consular Officer

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THE PATENT & TRADEMARK OFFICE MAILROOM DATE STAMPE.
HEREON, I ACKNOWLEDGEMENT THAT ON THIS DATE THE
PATENT & TRADEMARK OFFICE RECEIVED:

Utility Patent Application Transmittal (1 page); Fee Transmittal (1 page, with duplicate copy); Check No. 17114 in the amount of \$1,176.00; Specification including title page, claims and single page abstract (20 pages); Informal Drawings (4 sheets, 5 figures); Declaration for Patent Application (with Power of Attorney (2 pages); Recordation Form Cover Sheet (1 page, with duplicate copy); Assignment (3 pages); and Check No. 17115 in the amount of \$40.00; Power of Attorney by Assignee and Certificate Under 37 CFR § 3.73(b) (4 pages); Information Disclosure Statement (3 pages); and Form PTO-1449 (1 page) with attached references.

Invention: HEATED GAS LINE BODY FEEDTHROUGH FOR
VAPOR AND GAS DELIVERY SYSTEMS AND
METHODS OF EMPLOYING SAME

Applicant(s): Craig M. Carpenter

Filing Date: August 17, 2001

Serial No.: Not yet assigned

Date Sent: August 17, 2001 via Express Mail, Label No.

EL740531023US

Client/Matter Docket No.: 2269/4880US

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